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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,540	02/05/2002	Constantine J. Tsikos	108-127USANCO	6254

7590 04/23/2003

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EXAMINER

KIM, AHSHIK

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

BEST AVAILABLE COPY

Office Action Summary

Application No.

10/067,540

Applicant(s)

TSIKOS ET AL.

Examiner

Ahshik Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/05/02 (Preliminary Amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 263-277 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 263-277 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Preliminary Amendment

1. Receipt is acknowledged of the preliminary amendment filed on February 5, 2002
5 (paper #7). In the amendment, claims 1-262 are canceled, and claims 263-277 are newly added. Currently, claims 263-277 remain for examination.

Applicant is respectfully reminded that the received preliminary amendment has conflicting attorney docket number (108-127USANC0) and Application Serial No. (09/954,477). Relying on the attorney docket number, Application Serial No. should
10 have been 10/067,540, filed on February 5, 2002.

Specification

2. The lengthy specification and large number of drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's
15 cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Applicant is required to modify the summary of the invention and to restrict the descriptive matter so that they are confined to and in harmony with the invention to which the allowed claims are directed when the Application is allowed. For example,
20 POS embodiment, the embodiment regarding conveyer belt and multi-directional scanning (and all other un-related portions in the specification and drawings) should be removed. See MPEP § 1302.01.

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3. The Examiner respectfully suggest amending the title of the invention as follows:

PLANAR LASER ILLUMINATION AND IMAGING MODULE (PLIIM)-
BASED SEMICONDUCTOR CHIPS.

It is the Examiner's view that acronym decrypted title may better represent the
5 content of the invention.

Claim Objections

4. Claim 263 is objected to because of the following informalities:

Re claim 267: "micro-sized (diffractive or refractive)" should be rephrased.

10 In reviewing the claim, it appears that description in parenthesis is not equivalent to or dependent on characteristics "micro-sized". The Applicant may rewrite the phrase without parenthesis such that the claim reads "... micro-sized diffractive or refractive". In doing so, the phrase would clearly limit the characteristics of the cylindrical lens array, which is micro-sized and diffractive/refractive. See claim 274.

15

5. Claims 266-269, 271-273, 275, and 277 are objected to because of the following informalities:

In the above-mentioned claims: substitute all occurrences of "ELECTRONIC" with --electronic--.

20

Re claim 269, line 2: substitute "with a row (or column)" with --with a row or column-- or --with a row and/or column--.

Re claim 269, line 4, "is electrically addressable (i.e. activatable)" should be rephrased because it is the Examiner's opinion that "addressable" is not same as

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“activatable”. Addressable and activatable are two different characteristics. Dictionary definition of “i.e.” is *id est* which means “that is”. In view of the above, “activatable” can’t be equivalent to or interpreted as equivalent to “addressable”

Re claim 266, line 2, “scan (i.e. illuminate)” should be rephrased. Scan is not
5 illuminate.

Appropriate correction is required.

6. Applicant is respectfully suggested to apply care in using parenthesis, capitalization, and other expressions such as “(i.e. activatable)” in claim language.
10 Examiner is well aware as the inventor’s right to express claimed invention in claim language, however, potential inconsistencies pointed out in paragraphs #4 and #5 or other misinterpretation by one ordinary skill in the art should be avoided, if possible, by clearly defining claimed invention.

15 ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

20 7. Claim 280 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 280, the phrase “having a small and narrow (as possible)” renders the claim to be vague and indefinite. One ordinary skill in the art may have many different
25 thresholds regarding “a small and narrow (as possible) light emitting source”. Since the

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light source is to be realized on a semiconductor substrate, one can somewhat vaguely contemplate dimensional aspect of the LED, however, the Examiner respectfully requests the Applicant to re-phrase the quoted portion of the claim.

Appropriate correction is required.

5

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

10 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15 This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not
20 commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 263 266-269, 273-275, and 277 are rejected under 35 U.S.C. 103(a) as
25 being unpatentable over Scharf et al. (US 6,105,869) in view of Stern et al. (US 6,062,476).

Re claims 263, 266-269, 273-275, and 277, Scharf teaches a device and method for uniformly illuminating indicia (see abstract, col. 3, lines 64+, figure 4) comprising an array of planar illuminating source 18 (see figure 7, col. 5, lines 1+), image capturing module in the form of CCD 6. The LEDs are arranged in two dimensional array form, and that they are on opposite sides of CCD 6 (see figure 1). Although not explicitly recited, the shape of LEDs are cylindrical as shown in figure 4. Light refracting collimator 20 is aligned and assembled together with the array of LEDs 18 (col. 4, lines 8+). The PCBs on which LEDs and CCD are installed are considered to be a semiconductor chip. One of many embodiment provided by Scharf includes a scanning an information while an item is being moved on a conveyer belt (col. 1, lines 60+).

Scharf fails to specifically teach or fairly suggest that the light source is surface emitting lasers (SELs).

Stearn teaches a scanning device incorporating vertical cavity surface emitting laser (VCSEL) (See abstract; col. 4, lines 10+).

In view of Stearn's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to incorporate well-known surface emitting laser (SEL) to the teachings of Scharf in order to reduce power consumption and extend the product life of a scanning device. SELs and LEDs are well-known light source for scanning/illuminating device. SELs, compared to LEDs, are less bulky, dissipates less heat and as a result, require reduced power consumption. Accordingly, one ordinary skill in the art would be motivated to select a light source that are compact and more energy efficient. The scanning device utilizing SELs can be constructed in more compact

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design. Such modification would have been an obvious extension as taught by Stearn and is well within the ordinary skill in the art.

Re claim 267, the optical apparatus can be implemented in the form of camera (col. 1, lines 33+).

5

9. Claims 264, 265, 270-272, and 276 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scharf et al. (US 6,105,869) ad modified by Stern et al. (US 6,062,476) and further in view of Munro et al. (US 5,979,769). The teachings of Scharf as modified by Stern have been discussed above.

10

Scharf/Stern fails to specifically teach or fairly suggest that image detection array is arranged in a coplanar relationship with the illumination beam.

15

Munro et al. teaches an optical scanner capable of reading indicia in various field of views (see abstract; col. 1, lines 20+). As further shown in figure 1, the light sources 20 and 22, and image detecting module 60 are arranged in a coplanar relationship on the mounting surface 80, which can be a printed circuit board (PCB) (col. 5, lines 26+). As further disclosed in the abstract, the apparatus contains an oscillating mirror as recited in claims 265 and 276.

20

In view of Munro's disclosure and teachings provided by Scharf, installing light source and image capturing module on the same plane or on different plane seem to be functionally equivalent. Reviewing the structure taught in Scharf, the arrangement is not intended to install these elements on different plane. In fact, without the alignment bracket 12, CCD 6 and PCB 16 on which LEDs are installed can be on coplanar level. Accordingly, in view of Munro's arrangement, one ordinary skill in the art would be

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motivated to have them arranged in co-planar relationship if such arrangement can produce less-bulky scanner or contribute in saving production cost.

5

Conclusion

I. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Karpen (US 5,837,985) discloses an optical scanner comprising two-dimensional image sensor.

10 II. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Ahshik Kim* whose telephone number is (703)305-5203 . The examiner can normally be reached between the hours of 6:00AM to 3:00PM Monday thru Friday.

15 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (703) 305-3503. The fax number directly to the Examiner is (703) 746-4782. The fax phone number for this Group is (703)308-7722, (703)308-7724, or (703)308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [ahshik.kim@uspto.gov].

20 *All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.*

25 Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

30



Ahshik Kim
Patent Examiner
35 Art Unit 2876
April 18, 2003



KARL D. FRECH
PRIMARY EXAMINER